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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/764,072	01/19/2001	Hisham S. Abdel-Ghaffar	2925-0502P	6788

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HARNESS, DICKEY & PIERCE, P.L.C.  
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RESTON, VA 20195

EXAMINER

CONNOLLY, MARK A

ART UNIT PAPER NUMBER

2115

DATE MAILED: 08/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/764,072

Applicant(s)

ABDEL-GHAFFAR, HISHAM S.

Examiner

Mark Connolly

Art Unit

2115

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. Claims 1-11 have been presented for examination.
2. Applicant's arguments with respect to claims 1-11 have been considered but are moot in view of the new ground(s) of rejection.

#### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-4, 7 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Premierlani US Pat No 5958060 as cited in the previous Office actions.

5. Referring to claim 1, Premierlani teaches the method of determining a time offset between a central node and a secondary node comprising:

- a. receiving, at a central node, downlink and uplink timing information from a secondary node, the downlink and uplink timing information based on a periodic timing scale, the downlink timing information representing timing information for communication from the central node to the secondary node and the uplink information representing timing information for communication from the secondary node to the central node [col. 5 lines 51-62 and col. 6 lines 13-24].

Terminals 1 and 2 are interpreted as central and secondary nodes respectfully.

The delay between the central node and secondary node is interpreted as downlink information and the delay between the secondary node and central node is interpreted as downlink information.

- b. converting the received downlink and uplink timing information to a continuous time scale [col. 6 lines 20-24]. Roll over occurs when a time scale is periodic and performing calculations to compensate for roll over is interpreted as converting from a periodic time scale to a continuous time scale.
  - c. determining a time offset estimate between the central node and the secondary node based on the converted downlink and uplink timing information [col. 6 lines 13-24]. Round trip delay is interpreted as a time offset between the central and secondary nodes.
- 6. Referring to claims 2-4 and 7, Premierlani teaches using transmit and receive timestamps in order to calculate uplink and downlink information in order to determine the time offset between the two nodes [col. 5 lines 51-62 and col. 6 lines 13-24]. In particular, the Premierlani system begins with the central node recording a transmit timestamp  $T_{i-3}$  and sending it to the secondary node. Upon reception, the secondary node records a receive timestamp  $T_{i-2}$  and then saves timestamps  $T_{i-3}$  and  $T_{i-2}$  as timestamps  $T_{i-1}$  and  $T_i$  respectfully. Next, the secondary node records a new transmit timestamp as  $T_{i-2}$  and sends all timestamps back to the central node. Finally, the central node records a new receive timestamp as  $T_{i-3}$  and calculates the uplink and downlink information, converting to compensate for any wrap around or roll over if necessary, in order to determine the time offset between the central and secondary node.
- 7. Referring to claim 11, Premierlani teaches a method of determining a time offset estimate between a central node and a secondary node, comprising:
  - a. receiving, at a central node, downlink and uplink timing information from a second node, the downlink and uplink timing information based on a periodic

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timing scale, the downlink timing information representing timing information for communication from the central node to the secondary node and the uplink information representing timing information for communication from the secondary node to the central node [col. 5 lines 51-62 and col. 6 lines 13-24].

b. adjusting the received downlink and uplink timing information for time wraparound [col. 6 lines 20-24]. Roll over is interpreted as wraparound.

c. determining a time offset estimate between the central node and the second node based on the adjusted downlink and uplink timing information [col. 6 lines 13-24].

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 5-6, 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Premerlani as applied to claims 1-4, 7 and 11 above, and further in view of Thornberg et al [Thornberg] US Pat No 5757772 as cited in the previous Office actions.

11. Referring to claim 5, Premerlani does not explicitly teach calculating a plurality of uplink and downlink times. Thornberg teaches calculating a plurality of uplink and downlink delays in order to find an average uplink and downlink delay [col. 20 lines 15-22]. It would have been obvious to one of ordinary skill in the art to realize the benefit measuring a plurality of uplink and downlink delays because as it is well known, delay

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times can vary between transmissions and by measuring multiple delays, a more accurate estimate of uplink and downlink delays can be obtained.

12. Referring to claim 6, Premerlani teaches determining a minimum round trip delay which would obviously derive from a minimum uplink and downlink delay [col. 5 lines 28-32].

13. Referring to claim 8, Thornberg teaches setting a timeout period to determine if data has been lost in transmission [col. 6 lines 2-5].

14. Referring to claim 10, Thornberg teaches a cellular communications system in which a mobile device communicated with a radio network controller [col. 3 line 64 – col. 4 line 1, col. 3 lines 7-16 and 42-45].

#### ***Conclusion***

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Connolly whose telephone number is (703) 305-7849. The examiner can normally be reached on M-F 8AM-5PM (except every first Friday).

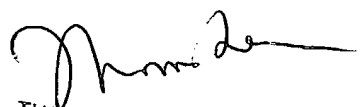
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas C Lee can be reached on (703) 305-9717. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mark Connolly  
Examiner  
Art Unit 2115

mc  
August 4, 2004



THOMAS LEE  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100